

10/539613

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ART 34 AMDT

We claim:

1. A process for removing sulfur compounds from hydrocarbonaceous gases, which comprises using catalysts which exclude activated carbons and zeolites and
5 comprise copper, silver, zinc, molybdenum, iron, cobalt, nickel or mixtures thereof at temperatures of from (-50) to 150°C and at a pressure of from 0.1 to 10 bar.
2. A process for removing sulfur compounds from hydrocarbonaceous gases as
10 claimed in claim 1, wherein copper catalysts are used.
3. A process for removing sulfur compounds from hydrocarbonaceous gases as
 claimed in claim 1, wherein molybdenum catalysts are used.
- 15 4. A process for removing sulfur compounds from hydrocarbonaceous gases as claimed in claim 1, wherein copper catalysts and molybdenum catalysts are used together.
- 20 5. A process for removing sulfur compounds from hydrocarbonaceous gases as claimed in one of claims 1, 2, 3 or 4, wherein temperatures of from 0 to 80°C and a pressure of from 0.8 to 4.5 bar are employed.
- 25 6. The use of the process as claimed in one of claims 1, 2, 3, 4 or 5 for producing sulfur-free hydrocarbonaceous gases for preparing hydrogen.
7. The use of the process as claimed in one of claims 1, 2, 3, 4 or 5 for producing sulfur-free hydrocarbonaceous gases for preparing hydrogen for operating a fuel cell.
- 30 8. A catalyst which comprises from 1 to 99.8% by weight of copper, silver, zinc, molybdenum, iron, cobalt, nickel or mixtures thereof and from 0.2 to 99% by weight of oxides selected from groups IIB, IIIB, IVB, VIB, VIII, IIIA, and IVA of the Periodic Table of the Elements which are solids at least up to 250°C.
- 35 9. A catalyst as claimed in claim 8 for the use in a fuel cell system.
10. The use of the catalyst as claimed in claim 8 for removing sulfur compounds from hydrocarbonaceous gases.